The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIDENARI YASUI
and
MASAHIDE SHIBATA

Appeal No. 1998-2549
Application No. 08/309,868

ON BRIEF

Before WALTZ, LIEBERMAN, and DELMENDO, Administrative Patent Judges.

DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 2 through 5, 11, and 12 in the subject application. Claims 7 through 10, which are the only other pending claims, have been withdrawn from further consideration pursuant to 37 CFR § 1.142(b) (1959).

The subject matter on appeal relates to a process for the aerobic biological treatment of an aqueous organic waste.

Further details of this appealed subject matter are recited in illustrative claim 11 reproduced below:

> 11. A process for aerobic biological treatment of an aqueous organic waste comprising the steps of:
>
> introducing the aqueous organic waste into an aeration tank;
>
> aerating the aqueous organic waste in the aeration tank in the presence of a biosludge composed essentially of aerobic microorganisms to form an aerated aqueous suspension;
>
> withdrawing aerated aqueous suspension from the aeration tank and introducing it into a solid/liquid separation unit;
>
> subjecting the aerated aqueous suspension in the solid/liquid separation unit to solid/liquid separation to form a separated sludge containing the biosludge and a separated liquid phase;
>
> withdrawing the separated liquid phase from the process as treated water;
>
> recycling at least a portion of the separated sludge back to the aeration tank;
>
> ozonizating [sic] either aerated aqueous suspension withdrawn from the aeration tank or a part of the separated sludge, the ozonizating taking place at a pH of 5 or lower; and
>
> recycling either the ozonized aerated aqueous suspension or the ozonized part of the separated sludge back to the aeration tank for aerobic biological treatment.

The examiner relies upon the following prior art references as evidence of unpatentability:

Kramer et al. (Kramer)	5,215,554	Jun. 1, 1993
Dorau et al. (Dorau)	5,362,395	Nov. 8, 1994 (filed Mar. 13, 1992)
Hei et al. (Hei)	5,484,549	Jan. 16, 1996 (filed Aug. 30, 1993)
Berndt	5,520,888	May 28, 1996 (filed Feb. 1, 1994)

Thomas D. Brock (Brock), "BIOLOGY OF MICROORGANISMS", 214-215 (1970).

Claims 2, 5, 11, and 12 stand rejected under 35 U.S.C. § 103 as unpatentable over Dorau in view of Hei or Berndt or Kramer. (Examiner's answer, pages 3-5.) Similarly, claims 3 and 4 stand rejected under 35 U.S.C. § 103 as unpatentable over Dorau in view of Hei or Berndt or Kramer and further in view of Brock. (Id. at pages 5-6.)

We reverse the aforementioned rejections.

We start by analyzing the scope and meaning of any contested claim limitation in order to determine whether the examiner applied the prior art correctly against the appealed claims. Gechter v. Davidson, 116 F.3d 1454, 1460 n. 3, 43 USPQ2d 1030, 1035 n. 3 (Fed. Cir. 1997); In re Paulsen, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). It is axiomatic that, in

proceedings before the U.S. Patent and Trademark Office (PTO), claims are interpreted by giving words their broadest reasonable meanings in their ordinary usage, taking into account the written description found in the specification. In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). However, the interpretation of the claim language must be "reasonable in light of the totality of the written description." In re Baker Hughes Inc., 215 F.3d 1297, 1303, 55 USPQ2d 1149, 1153 (Fed. Cir. 2000).

Here, appealed claim 11 recites: "ozonizating either aerated aqueous suspension withdrawn from the aeration tank or a part of the separated sludge, the ozonizating taking place at a pH of 5 or lower."[1, 2] (Emphasis added.) Although the phrase "aerated aqueous suspension withdrawn from the aeration tank" is not expressly defined in the present specification, it is clear from the ordinary meaning of this recitation and the enlightenment found in the accompanying written description that the term

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[1] Appealed claim 12, which is the only other independent claim on appeal, also recites the same language.

[2] According to the appellants, this step, together with the step of recycling the ozonized material back to the aeration tank, enables the reduction of excess sludge generated in the aerobic biological treatment process. (Substitute appeal brief, p. 4; specification, pp. 3-6.)

"aerated aqueous suspension" refers to the material which is removed from the aeration tank prior to its introduction into the solid/liquid separation unit. Specifically, we note that appealed claim 11 recites the following step: "withdrawing aerated aqueous suspension from the aeration tank and introducing it into a solid/liquid separation unit." Hence, the language "aerated aqueous suspension from the aeration tank" in the "ozonizating" step must refer to the same "aerated aqueous suspension" which is withdrawn from the tank prior to its introduction into the solid/liquid separation unit. This interpretation is consistent with the written description found in the specification, which enlightens one skilled in the relevant art that it is the "aerated aqueous suspension" (prior to solids/liquid separation) which is subject to the "ozonizating" step. (Specification, pages 5, 6, 9, 35 and Fig. 5.)

Having resolved the scope and meaning of the contested claim limitation, we now focus on the examiner's stated position. In responding to the appellants' argument that Dorau does not describe the step of "ozonizating either aerated aqueous suspension withdrawn from the aeration tank or a part of the

separated sludge, the ozonizating taking place at a pH of 5 or lower" (substitute appeal brief, pages 5-6), the examiner states:

> As set forth in the rejection above, Dorau et al teach all the process steps that Appellants assert are missing. Specifically, Dorau et al. teach the removal of a portion of an aerated aqueous suspension from the aeration tank, ozone treatment of the aerated aqueous suspensions and the returning of the ozonized aerated aqueous suspension back to the aeration tank. [Examiner's answer, p. 7.]

The examiner's position is in error. It is true that Dorau teaches ozonizing treated sewage. (Column 5, lines 1-22.) As shown in Dorau's drawing figure, however, the sewage material to be ozonized is filtered (i.e., subject to solids/liquids separation) prior to the ozonizing step. The examiner admits as much. (Examiner's answer, pages 3-4.) By contrast, the appealed claims require ozonizing an "aerated aqueous suspension" which has not been subject to a solids/liquid separation, as we have discussed above.

The examiner has cited Hei, Berndt, and Kramer to show the effects of pH on the solubility of ozone in an aqueous solution. (Id. at page 4.) Similarly, the examiner has cited Brock to support the rejection of claims 3 and 4. However, none of these references provide the requisite motivation, teaching, or suggestion to modify the process described in Dorau to include a step of ozonizing "an aerated aqueous suspension" which has not

been subjected to solid/liquid separation as required by the appealed claims.

For these reasons, we reverse the examiner's 35 U.S.C. § 103 rejections of (i) claims 2, 5, 11, and 12 as unpatentable over Dorau in view of Hei or Berndt or Kramer and (ii) claims 3 and 4 as unpatentable over Dorau in view of Hei or Berndt or Kramer and further in view of Brock.

The decision of the examiner is reversed.

REVERSED

THOMAS A. WALTZ
Administrative Patent Judge)

PAUL LIEBERMAN
Administrative Patent Judge) BOARD OF PATENT APPEALS AND INTERFERENCES

ROMULO H. DELMENDO
Administrative Patent Judge)

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